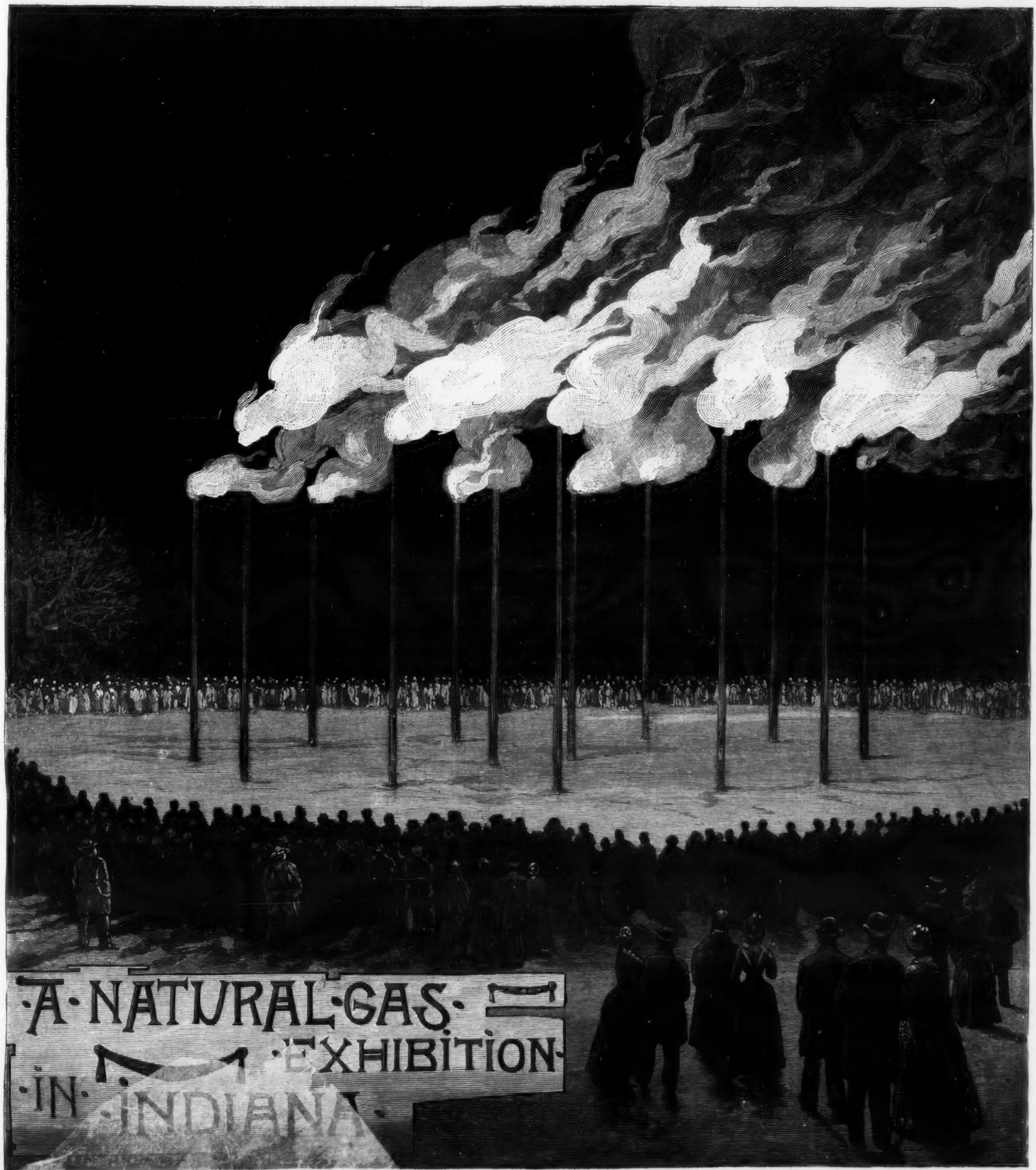


INDIANA SUPPLEMENT TO FRANK LESLIE'S ILLUSTRATED NEWSPAPER

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THE NATURAL GAS-FIELD OF INDIANA.

ITS GROWTH AND DEVELOPMENT.—INDIANAPOLIS, ANDERSON, MUNCIE, MARION AND WABASH—IMPORTANT FACTS FOR THE CONSIDERATION OF CAPITALISTS AND MANUFACTURERS.
SEE NEXT PAGE.

NATURAL GAS.

THE INDIANA FIELD---INTERESTING FACTS ABOUT THIS NEW SOURCE OF COMFORT AND WEALTH.

INDIANAPOLIS, January 3d, 1889.

NATURAL GAS IN INDIANA! What a revelation it has been to the world! Nobody ever dreamed of such a fountain of wealth, and yet it exists here in seemingly exhaustless quantities. There were geologists and others claiming to be scientists who boldly asserted that there was no natural gas in the State, and that it was a wanton waste of human endeavor to drill for it; but, contrary to their predictions, it was found, and the supply appears to be unlimited.

It is now some two years since the attention of the country was called to the discovery of natural gas in Indiana, and the extent of the field has proven a great surprise. Whether its boundaries will continue to expand is a problem to be solved, but the indications are that its full extent has been pretty definitely defined.

In an interview, a few days since, with Professor Gorby, the State Geologist of Indiana, that gentleman kindly consented to give me some important points in relation to the natural-gas field, which were as follows:

"The natural-gas area of Indiana," said Professor Gorby, "is a vast reservoir, embracing more than 4,000 square miles of territory. It is several times larger than the Trenton Rock gas-area of Ohio, and considerably greater in extent than all the gas-fields of Ohio and Pennsylvania combined. Gas in paying quantities is found as far south as Lawrenceburg, Dearborn County, situated upon the Ohio River, and as far north as Auburn, De Kalb County, within twenty miles of the Michigan State line. The extreme length of the gas-area is about 165 miles, and its extreme width about 65 miles.

"This vast field embraces all of Blackford, Decatur, De Kalb, Delaware, Grant, Hancock, Henry and Madison Counties, and the greater portion of Allen, Fayette, Franklin, Hamilton, Howard, Jay, Miami, Randolph, Rush, Tipton, Wabash and Wayne Counties. Many other counties in the State furnish gas in small quantities.

"There are 11 paying wells in Blackford County, 2 in Dearborn, 29 in Decatur, 5 in De Kalb, 37 in Delaware, 3 in Fayette, 4 in Franklin, 28 in Grant, 70 in Hamilton, 11 in Hancock, 4 in Harrison, 15 in Henry, 28 in Howard, 17 in Jay, 1 in Jennings, 29 in Madison, 41 in Marion, 7 in Miami, 10 in Randolph, 5 in Rush, 7 in Tipton, 7 in Wabash, and 10 in Wayne. This makes a total of 381 good wells. Drilling is still going on, and the number is increasing daily."

"What, Mr. Gorby, is the aggregate daily production of your wells?"

"The daily capacity of all the wells in the State at this time is about 600,000,000 cubic feet, measured at the well-head. A well measured at the well-head will show its greatest capacity. The volume of gas decreases with the length of the pipe. This is on account of the friction produced by the pressure of the gas on the sides of the pipe. The longer the pipe-line, therefore, the greater the friction, and the movement of the fluid through the pipe is retarded proportionately."

"Where are your strongest wells located, and how do they compare with the wells of Ohio and Pennsylvania?"

"Our most productive wells are located in Hamilton, Madison, Grant and Blackford Counties. The best wells in the Findlay (Ohio) field produce about 12,000,000 cubic feet of gas per day. Ours are about equal to them. The strongest well in Indiana, according to the measurement of Professor C. B. Gerrard, a very competent engineer, is the McCullough Well at Anderson, which he calculates flows 14,641,000 cubic feet of gas per day. Well No. 1 at Fairmount, Grant County, measured by Professor Orton, State Geologist of Ohio, yields 11,500,000 cubic feet of gas daily. Well No. 2 at Hartford City, Blackford County, produces upwards of 9,000,000 cubic feet daily. The Granger Well, near Noblesville, Hamilton County, and measured by myself, yields more than 11,000,000 cubic feet of gas per day, while there are several other wells in the same county almost, if not quite, as strong. Well No. 11 at Marion, Grant County, produces 8,000,000 feet of gas daily. Besides these there are very strong wells in Howard, Miami, Wabash, Jay, Delaware, Hancock and Marion Counties, and average wells in several other counties. The average capacity of the wells in the counties named above is probably considerably greater than that of the wells in the Ohio field, and when we consider the superior advantage of area possessed by the Indiana region, together with the great productiveness of its wells, the importance of this vast field is greatly enhanced in comparison with the more limited gas-producing areas of other regions.

"I have no accurate measurements of the Pennsylvania wells, hence I can give no reliable items of interest concerning them; but the fact that manufacturers are constantly leaving that region and locating in the Indiana territory is one that admits of significant interpretation.

"Capital is being invested in manufacturing enterprises throughout the Indiana gas-

area at the rate of more than \$300,000 per month. Among those located, and in active operation, are fourteen glass manufacturing, in which is invested more than \$1,100,000, and which furnish employment to 1,630 hands. There are fourteen iron manufacturing concerns, with a capital invested of \$1,634,000, and employing 1,907 hands. There are four straw-paper manufacturing, with a working capital of \$650,000, and employing 341 hands. Also four wood-pulp works, with a capital of \$290,000, and employing 231 hands.

"Altogether there are seventy-nine different manufacturing concerns, with a total capital of \$4,462,500, employing, in the aggregate, 5,734 hands. Many of these concerns have moved to this State from Pennsylvania and other gas-producing regions, and have been induced to locate here on account of the superior advantages which this State affords. For instance, gas throughout the Indiana area is furnished to manufacturers for a term of years free of charge, while in the older manufacturing centres it can be procured at a cost but little less than that of coal. To illustrate: Gas is sold to glass manufacturers at Pittsburgh at \$50 per pot per month. A 30-pot factory which runs ten months in the year will consume \$15,000 worth of gas per annum. That amount is saved to a manufacturer of the same goods in Indiana. This field offers the same advantage to the manufacturer of any line of goods."

"What, in your opinion, is the origin of natural gas?"

"Geologists generally agree in the conclusion that it is of organic origin; that it is derived from the decomposition of organic matter that was buried with the sediment which now forms the rocks. The shales, as a rule, are highly bituminous, and these, it is concluded, are largely the source of both the gas and petroleum. With the sediment that forms the shales it is known that large quantities of organic matter were deposited. This matter consisted of both animal and vegetable substances, but principally vegetable. In the decomposition of all forms of organic substances, the greater portion is finally resolved into gas. This we know to be true regarding the matter that is deposited upon the surface of the earth at the present time, and the same laws that govern now have always prevailed. If a body decomposes upon the surface of the earth, or in shallow water, the gas escapes into the atmosphere, and being much lighter than air, it is lifted by the latter to an altitude where the tenuity of the atmosphere equals that of the gas, when complete separation of elements takes place, and the ultimate atoms of matter fall back to the earth again, to fertilize the soil, to be taken up by new plants, which develop, die, decay; and so the round continues.

"But at times much organic matter was deposited under conditions that did not admit of immediate decomposition, and in areas where vast quantities of sediment of a mineral character were continually being washed in over it, and when decomposition finally did occur there was such a vast accumulation of foreign matter above the gas that it was confined in the reservoir of its origin. It is highly probable that the crystallization of the rocks was contemporaneous with the generation of the gas, and the interstices between the crystals, which form the pores of the so-called 'porous rocks,' were formed as the gas was generated.

"Decomposition of organic matter under natural processes, however slow they may be, produces gas similar in elements to the much-sought-for fuel, hence I conclude that natural gas, as we term it, has originated in the manner indicated."

"What can you say with regard to the permanency of the gas supply?"

"But little. No experiments have been made in this State as yet to determine whether the wells are failing to any appreciable extent or not. One thing is certain, however, and that is, that the entire supply will be wholly exhausted in time. There is undoubtedly a fixed or limited amount of gas stored in the rocks, and that amount is limited by the capacity of the reservoir. When the supply is drawn off once, it is not likely to be replenished. It is true, very likely, that gas is even now being slowly generated from petroleum, but the quantity that may be expected from that source is probably not greater than the natural waste, to say nothing concerning the vast quantities drawn off daily by artificial means. I am not prepared to say how long natural gas will last, but I do wish to state that the extravagant waste of it which has prevailed through this State since its discovery is foolish, and almost criminal. For a long period the daily waste exceeded 75,000,000 cubic feet, worth at least \$7,500, and such extravagance should be restricted by prompt legislation at the approaching session of our General Assembly."

Professor A. J. Phinney, of Indiana, who has given the subject of natural gas considerable attention, says:

"The combined capacity of all the wells, from actual measurements and fair estimates,

was, in July last, about 500,000,000 cubic feet per day. Developments since then will, we are informed, increase that amount to about 650,000,000, perhaps 700,000,000, cubic feet per day. Of the wells a large number show a daily capacity from 1,000,000 to 3,000,000 cubic feet. A large number range from 3,000,000 to 5,000,000, while there is a liberal number with a daily flow of from 5,000,000 to 10,000,000, with a still greater capacity claimed for a few. The daily consumption in the field would probably reach to about 200,000,000 cubic feet.

"There have been so far very few, if any, failures to obtain gas in any of the wells drilled within what is considered as positively productive territory, although some wells required torpedoing before the flow was obtained. Absolute failures have occurred only around the margins of the field, where salt water was struck if the drill tapped the rock at a level too low for the gas, or where non-porous rock was found in the higher portions of the field. The topographical map of the upper surface of the Trenton limestone shows very clearly the form of the Cincinnati arch, the dominating structural feature of the State. This arch is the reservoir for the gas and oil which have risen into the highest porous strata. It acts like a great tube with its upper end closed, because of lack of porosity in the rock. Its lower portion, however, is porous and open throughout its entire extent to the Illinois line, as well as on its northern and southern slopes. The gas-bearing porous strata is probably continuous over most of Indiana north of Indianapolis, and also probably in places at least connected with water-bearing strata below. Almost all the gas and oil that has found its way into the porous strata of the Trenton limestone over nearly all of Northern Indiana has found its way into this upper portion of the arch in obedience to the laws that govern the flow of gas, oil and salt water. The gas is in the highest portions, being the lightest, while the oil lies just below, the salt water filling all the remaining porous rock, and everywhere subject to an artesian pressure varying from 300 to 875 pounds per square inch, according to the depth from the surface at which it is struck. Sometimes only a few feet of compact rock intervenes between the gas-bearing strata and a salt-water-bearing strata below.

"Owing to the immediate contact between the water and the gas, the artesian pressure of the salt water is transmitted to the gas. This pressure, plus the expansive force of the gas itself, equals the rock-pressure of the gas, which over the main body of the field is 320 pounds per square inch. Under this pressure 1,000 cubic feet, as measured at the well, would occupy the space of only about fifty cubic feet in the rock. The study of this rock-pressure is a very important and practical subject, as the success of piping gas depends upon it. Experience has shown that in piping gas there is a loss, from friction, of from four to five pounds per mile. The effect of this friction is the flaming up of the gas in the well, producing a retained pressure. If a well is turned on full into a main, the loss by friction, plus the pressure indicated by the regulator at the reducing station, equals the retained pressure at the well. Experiments show that a well having a daily capacity of 4,500,000 cubic feet could carry 25 pounds retained pressure and discharge eight-ninths of its capacity; 50 pounds and discharge eleven-fifteenths of its capacity; 75 pounds, two-thirds; 100 pounds, five-ninths; 125 pounds, thirteen-forty-fifths its capacity. For retained pressures greater than 125 pounds the diminution is very rapid, though liable to variation from several causes. The stronger the well the greater retained pressure it can carry with the least diminution of its flow, while small wells are practically useless for piping long distances, because of the small amount of gas they can discharge under a high retained pressure.

"Where the draught on any portion of the field is very large, unless the rock is very porous, the working rock-pressure will be found to fall considerably below 320 pounds. If all the wells were closed the pressure would be 320 pounds, but when all are in use, if one is closed, if a large well, it will show 200 or 250 pounds in one or two minutes. After that time the increase will be slow, and it may require one or two hours to reach its maximum. This does not indicate any failure in the supply. The pressure shown in one or two minutes in a large well is the available working pressure of that portion of the field, and it varies from several causes; but in piping gas, all calculations relative to the amount the mains will carry, or the distance to be conveyed, must be based upon it.

"As to the origin of natural gas, it is shown in every case to be closely related to rock formations that are heavily charged with organic matter, either animal or vegetable. Porous rocks everywhere contain water, but it is only under certain conditions that they may contain gas. The St. Peter's sandstone that underlies the Trenton limestone is also in the form of an arch, but it contains nothing but salt water from Michigan to Tennessee, though very porous where the arch is most marked. There is no gas-producing rock beneath it.

"How long the supply will last is a matter of conjecture, as it will depend upon the demands made on the field and the economy practiced in its consumption. The supply is immense, and will probably last a great many years. So far as now known, there have been no failures or decrease in the flow of wells in the main field where properly cared for.

"The greatest interest in the natural gas is its practical use as a fuel, not only for household purposes, but for manufacturing as well. Although but little more than two years has elapsed since its first discovery in Indiana, the gas-area has already taken its place as a manufacturing district, and from present indications it bids fair to be the most important one in the State. Marion, Muncie and Anderson have each secured a large number of factories, giving employment to hundreds of men. In all these cities the price of real estate has nearly doubled, while the demand for houses is far in excess of the supply. Among the other cities and towns that are taking on a new life are, Knightstown, Portland, Spiceland, Hagerstown, Tipton, New Castle, Middletown, Pendleton, Dunkirk, Redkey, Winchester, Greenfield, Noblesville, Fairmount, and a host of other towns have caught the spirit of progress. Home industries are springing up in every hamlet, and the farmer even has caught the spirit that desires the best of nature's fuels. One great advantage of the Indiana field is the fact that the manufacturer can sink his well at the very doors of his factory with every assurance of securing a good well, and he can then draw from the fountain of wealth so long as the supply shall last."

NATURAL GAS AND DECORATIVE ART.

"Since the introduction of natural gas, it is surprising to notice how the lovers of decorative art have progressed in their ideas," said a well-known dealer in wall-paper in Indianapolis, "for we now sell a class of goods which would have found no favor here two years ago in the artistic eye of the average lady, and simply because at that time no paper of the delicate designs now used would withstand the dust and smoke that then pervaded every nook and corner in every residence. During the past season more unique designs of paper and decorations have been presented and sold than ever before; and houses are now furnished in what might be regarded as a gorgeous manner, that otherwise would have had nothing but the plainest styles placed upon them."

"And what is more," said a picture-dealer in Indianapolis, "we are selling more costly pictures than ever before, and we set them in frames far more rich, delicate and elaborate than we ever dreamed of disposing of." Upon further inquiry we learn that there has also been a most marked change for the better in house-furnishings of every character, including carpets and furniture, and that people who are now furnishing new homes, even those in moderate circumstances, are placing within them goods that two years ago would not have been considered even for one moment.

There can be no sight more lovely than a beautiful natural-gas fire in a grate, supplied with artificial pieces of wood made of fire-brick. The imitation has been brought to such perfection that it would baffle an expert to discover the difference between the original and the artificial. The heat is regular, and may be made intense or as light as necessity may require by the mere turning of a key in the supply-pipe. One twist turns it on or off. There are no ashes to carry down, no grates to clean, no chimneys to sweep, and no smoke to arise. It is simply a thing of beauty and a joy forever. It makes of the household a happy family. The temperature may be down to zero outside, but there is no evidence of Winter within. The bedrooms, the parlors, the halls and the kitchen are as comfortable as on a Summer's day.

But with all the joy and happiness which natural gas thus brings, one of its chief advantages is its slight expense, which is at least 90 per cent. less than when coal is used, and so it sheds light and heat upon the poor as well as upon the rich. It is used for cooking in homes as well as for heating and illuminating. While it is not a declared success as an illuminator, still it answers very well for that purpose when properly controlled. There has been lately introduced a burner that renders it very bright and clear and regular, fully as desirable as an incandescent light, but the parties who own the right for Indiana are wasting their time by trying to sell county rights at the enormous rate of \$15,000 per county, instead of selling individual rights and the burner with it.

NATURAL GAS VS. COAL.

One of the great problems of the manufacturer is his fuel-account. It rises in importance second only to that of the disposal of his wares; and it is a question that cannot be shirked, but must be met. Since the gas-field is gradually but surely becoming an industrial centre, the question of fuel to those who are not in it will constantly become more pressing, and a decision will become an absolute necessity. Manufacturers all over the United States are asking themselves whether they can compete with rivals in the same lines who are located within the gas-

field, and who do not expend one dollar a year for gas fuel with which to generate steam to run their machinery, or to heat or illuminate their workshops; and there is but one answer to all such inquiries: *They cannot do it!* The first glass factory that came to Indiana was the warning for others to follow or perish where they were, and they have obeyed the summons until a dozen or more have come to remain. The cost of natural gas to the factories in Pittsburgh, Wheeling, Bellaire, and other points on the Ohio River, is \$50 per pot per month, while in Indiana it is *absolutely free*, so that the manufacturer who ran 30 pots in Pittsburgh paid \$1,500 per month for fuel, while his competitor out here, with works of the same capacity, saved just that amount, or, in plain terms, \$18,000 a year. And Chicago being the great distributing-point for all that class of goods, there is also a saving in the way of freight, for the tariff from Pittsburgh to Chicago is 17 cents a hundred in car-load lots, while from Anderson, Muncie and Marion it is but 11 cents, a difference sufficient to make a saving of from \$30 to \$60 per week, according to the amount of the output.

It is reported in the daily press that the glass industry is almost paralyzed on account of our production by factories in the Indiana gas-field, and meetings have been held to "regulate" it; but having only recently made a tour of the leading towns within the belt, I must say that I made no discoveries as to any diseased condition of the trade in Anderson, Muncie or Marion. The trouble is all on the outside, among the manufacturers in Pennsylvania, on the Ohio River, and at points where they are compelled to depend upon coal for fuel. They cannot compete with the manufacturers in the natural-gas district, and they are virtually holding up their hands and crying for mercy. The fact has become patent that those factories using coal exclusively must either come to the Indiana gas-field, where fuel is *free*, or they must close their works and send their operatives adrift. And what we have stated with regard to the glass industry is true also of all others where natural gas is brought into competition with coal or any other character of fuel—that is, where it is secured without cost. There can be eventually but one result from this state of affairs, and that is, that before five years the Indiana gas-field will have become the greatest industrial centre in the United States, not only in the number of factories there collected, but also in their extent and the variety of articles produced.

"While cheap fuel is the main advantage claimed for the natural-gas region, there are others of great importance," remarked Mr. H. S. Doggett, editor of the *Anderson (Ind.) Herald*. "A manufacturing city is always more prosperous when surrounded by a good agricultural district. This insures a constant supply of the necessities of life at a minimum cost. The farmers of Madison, Grant, Marion and Wabash Counties could each raise enough wheat, corn, potatoes and vegetables every year to feed a city of two hundred thousand population, and this is one consideration that will contribute to make the gas-field a great manufacturing centre. Again, employers are every year looking more and more after the health and comfort of their employes, and their operatives are constantly on the lookout to better their condition and live as well as possible. In New England, where the Winters are long and severe, and fuel expensive, the workmen use up in Winter what they make in Summer. Heat and light are among the heaviest expenses, and they economize in them only to be compelled to make it up in more food and at higher prices. In the gas-belt the mechanic will find no coal-bills to consume his hard-earned savings. His wife and children are not compelled to shiver in cold rooms over scanty fires. Here he can keep his house as hot as he desires, and at an outlay so insignificant that it is not worth reckoning. He can rent a house as cheaply as in any other city in the world, and have his fuel and light thrown in. With this abundant supply of warmth, the necessity for so much meat and other costly food disappears. He is enabled to live better, happier and more cheaply than ever before. The more the matter is considered in its various lights, the more convincing becomes the conclusion that right here can be built up manufacturing interests, the like of which has never been seen elsewhere in the world. Manchester, Sheffield, Birmingham and other centres in Europe, now so well known, will be forgotten, and their places taken by cities of the gas-belt. Anderson, Muncie and Marion have already had a foretaste of what is in store for them, and Indianapolis itself has felt the impulse of a new life. Its march forward at this time is not only steady, but rapid, while its future never was so bright and promising; but in the case of the three little cities named, their metamorphosis has been so pronounced, that they wonder at what has been wrought in their midst within the short period of two years. Old things have passed away, and lo! all things have become new.

Special reference has been made in this paper to Anderson, Muncie, Marion and Wabash, though the latter city is not within the exact limits of the gas-field. There are other cities in the gas-district, such as New Castle, Hartford City, Winchester, Greenfield and Kokomo, but none of them have as yet made any distinct progress in industrial pursuits. Those mentioned in this publication are the most important from every

point of view. They have gas, and plenty of it, and also all other necessary facilities to render them desirable locations for the location of manufacturers, and, in fact, they are the only cities having natural gas that have felt the tide of prosperity pour in upon them. We have no particular choice between them, and have tried to treat each one impartially and honestly.

JOHN H. PATTERSON.

INDIANAPOLIS,

THE CAPITAL CITY OF INDIANA.

INDIANAPOLIS, January 3d, 1889.

INDIANAPOLIS has at last thrown off the quiet of the inland town and assumed the airs of a great city. It is inland, to be sure, but that impediment has been overcome, and there is to be seen and heard upon every hand the evidences of a new life, and almost of a new civilization. The cloud of obscurity that has appeared to hang over its commercial and industrial life for years has been dispelled, and now its sky is clear in every direction. The wholesale merchants are covering more territory than ever before, and are giving vigorous battle to their competitors in Cincinnati, St. Louis and Chicago; and what is more, their contests are not in vain, for victories are being won. Its manufacturing has grown even faster than its commerce, and some of its industries have developed into institutions of national renown. The flour-mill machinery made here is finding a market not only in Europe, but also in Australia and other foreign countries, besides in all parts of the United States.

There is really nothing strange in this state of affairs except in its recent origin, for there is no earthly reason why dry goods and groceries, and boots and shoes, and hats and caps, and, in fact, all the necessities of life, cannot be purchased upon just as advantageous terms in Indianapolis as in any city in the country except New York and Chicago. I am told that the growth of the general wholesale trade in this city has almost doubled in the last two years; that its expansion has been a marvel even to the merchants themselves.

Meridian Street is the great wholesale thoroughfare, and any day in the week, for three squares, it presents a wonderfully busy scene. The sidewalks are filled with outgoing goods while the street is thronged with carts, drays and wagons carrying merchandise. The buildings are almost all massive in appearance, no less than of attractive architecture; and what is unusual in many large cities, nearly all the wholesale merchants in Indianapolis own their places of business, thus cutting off from three to five thousand dollars a year in rent, which enables them all the better to contend for trade and quote bottom prices to the country. But the wholesale trade is not by any means confined to Meridian Street, as it has overflowed into several others, at least a half-dozen, and some large houses have left it in order to secure more room for their growing trade.

Some enthusiasts claim a population of 135,000 for Indianapolis, but more conservative estimates place it at about 120,000. It has increased 25,000 every ten years since 1860. The Census of 1880 placed the population at 75,000, so that if it had grown only with its usual percentage, it would about cover 100,000 now; but everybody knows that the increase of the past three years has been heavy, while for a year and a half it has been marvelous. The wonder has been expressed where the new people came from, for their influx has been so great that it has not been an easy task to absorb them. Houses have gone up literally by the hundred in every direction, and still the cry is for more. The supply has been very far from meeting the demand, and the prospect is not good for immediate relief.

While Indianapolis has derived some advantage in being the capital of the State, still it has had but slight influence upon its prosperity. Its location being central, and the country surrounding it being agricultural in character, it has partaken somewhat of its general spirit of life, and activity. As Indiana developed, Indianapolis prospered; but it did so because it could not well do otherwise. For twenty-five years it has been a really great railroad centre, and more trains arrive and depart daily at this time than in Columbus, Cincinnati and Louisville combined. Considering its advantages in location and transportation, the wonder is that it has not done better with its opportunities; but, as before stated, it has partaken so of an agricultural growth, that it was not until recently that it brushed off its accumulations of hay-seed and made a strike for a leading position in the commerce of the country. Handicapped as it has been by Cincinnati, Louisville, St. Louis and Chicago in the development of its wholesale business, it has been content with what was practically given to it, and has never until a recent period attempted to push itself to the front.

The question naturally arises: What is the cause of the recent remarkable growth of In-

dianapolis? The answer need not be prolonged, nor of a fanciful character.

Indiana is one of the greatest States in the American Union. In 1880 it had a population of 1,978,301, and will easily reach 2,400,000 by 1890. It is rich in everything that conduces to human happiness and wealth. Its soil is exceeded by no State in fertility or in the variety of its productions. Its real and personal property in 1880 was estimated at \$1,499,000,000, which gave \$758 to every man, woman and child within its borders. It has more miles of railroad than any State in the Union in proportion to its square miles, and stands equal to Illinois and Ohio not only in the number of its public schools according to population, but also in the number of the pupils in attendance. Its land in all parts of the State is generally in a high state of cultivation, while in all necessary internal improvements it has no superior. It has coal and iron, and timber and natural gas, and all the essential elements of prosperity.

With such a State surrounding it, nothing short of Providential interference could possibly impede the growth of Indianapolis. It is on a direct line between Cincinnati and Chicago, New York and St. Louis, and Kentucky and the North, and it must of necessity partake of the life-giving commercial currents leading through it.

If my readers will take but a glance at the railroad system of which Indianapolis is the centre, they will quickly see that the question of transportation, in so far as that city is concerned, is settled forever; that is, unless some giant monopoly should step in and buy up all the roads centring there, and thus take the city into its death-like grip and manage its transportation interests in its own way. But Indianapolis has gone beyond the boundaries of any single railroad management, and is the happy possessor of plentiful competition in every direction with but the single exception of south to Louisville.

In order to be entirely accurate, I have counted the number of lines of railroads centring here, and find, from the official time-card, that there are sixteen, and that the number of trains arriving and departing from the great Union Depot daily foot up one hundred and sixteen.

There is probably no city in the United States so closely, so intimately and so thoroughly interlaced and interwoven with its surrounding country, or more completely identified with it, than is Indianapolis with the entire State of Indiana. With but few exceptions, every county in the State is on a line of railroad directly connected with this city; and I have serious doubts whether there is a single county seat in the State that could not be reached in six hours. The railroad system of this State has arrived at such a point where it is almost faultless in its completeness; and the magnificent new Depot recently opened to the public is typical of the proud position Indianapolis holds in the railway world. It is not only the largest structure of the kind in this country, but it is also, by far, the most beautiful and best-appointed. Its cost was \$1,000,000, and although it is so well depicted in this paper, the best pen and pencil are unable to truly convey its grandeur and beauty. For years to come it will be a monument to Indianapolis commemorating one of its vital sources of prosperity and wealth—its railroads.

But I must not forget to say that all the sixteen lines of road that touch this city are connected, for freight purposes, with a Belt road that entirely encircles it, and renders them practically as one line. Some 5,000 freight-cars are handled daily by the Belt road, and only at an expense of \$1 per car. The line of the Belt is rapidly filling up with manufacturing industries, and all they need to secure perfect connection with every road out of Indianapolis is a switch connecting them with the Belt. This one fact has settled the problem of transportation for the manufacturers of this city. They do not now need to locate at any special point, but only where land is cheap and accessible to connection with the Belt.

Since the introduction of natural gas in this city there have been a large number of new industries established, and others are being organized, while the business of the city is enlarging in every department of trade. It is this that has revolutionized Indianapolis and given it such wonderful momentum in its new growth. Its vibrations are felt on every side, and the evidences of its increase in wealth and population are observed on every hand. Real estate has taken an upward turn, and rents have visibly increased both for stores and for private residences. Store-rooms long vacant have become occupied by prosperous merchants, and property that went begging for purchasers two years ago is now held at paying figures, and the "For Sale" display-card, once so prevalent, has been split into kindling. Values of all kinds have increased, and the old real-estate owners who have been "property

poor" for a decade have assumed a smile of contentment and peace never before observed. Outside capital is coming here in goodly quantities, and enterprises that have been languishing for years have suddenly assumed a new life. Chicago capital has taken hold of the street-car system of the city, and the result is that now, for the first time in its history, the people of Indianapolis have something in that line to be proud of. Washington Street is now a great and beautiful thoroughfare, and the throng of pedestrians and vehicles that crowd it ten hours every day is ample evidence that "something is up."

What agency is it that has made Indianapolis a metropolis?

Natural gas did it! This one element of nature has forever set the city upon its feet, and nothing but an unnatural disaster can turn it from its course. While the growth of the city during the past twelve months has been wonderful, even greater strides are confidently looked for during this year.

It is true that Indianapolis receives all its supply of natural gas by means of pipe-lines extending from a neighboring county, still the gas is here, and if the different companies engaged in supplying the people will only be a little liberal and just, and not strive to control it too much, there will be a sufficient amount piped to satisfy the needs of the public, both for domestic and for business purposes. Even after piping here at great expense, its costs the consumer but a trifle, and many are as well satisfied as though the city was in the centre of the gas-region; and so far as the benefits and pleasure of the use of the gas is concerned, they do not know any difference whatever. It is now burning in at least two thousand homes in this city, and wherever it is introduced, a new pleasure has been imparted to the fire-side.

The business of piping the gas to Indianapolis has really only just begun—at least, that is the practical side of the question—and if every household and factory is to be supplied, which must be done, then a half-dozen additional companies must enter the field. Any other policy than this would be detrimental to the interests of the general public.

Reference has been made to the spirit of progress everywhere prevalent in the city, and we need only give as an example the beautiful new paving that has been placed upon Washington Street for half a dozen squares. It has enhanced the value of property, greatly increased the street traffic, and has made that thoroughfare worthy the fame of the city. Retail merchants located thereon say that their sales are already showing a marked increase.

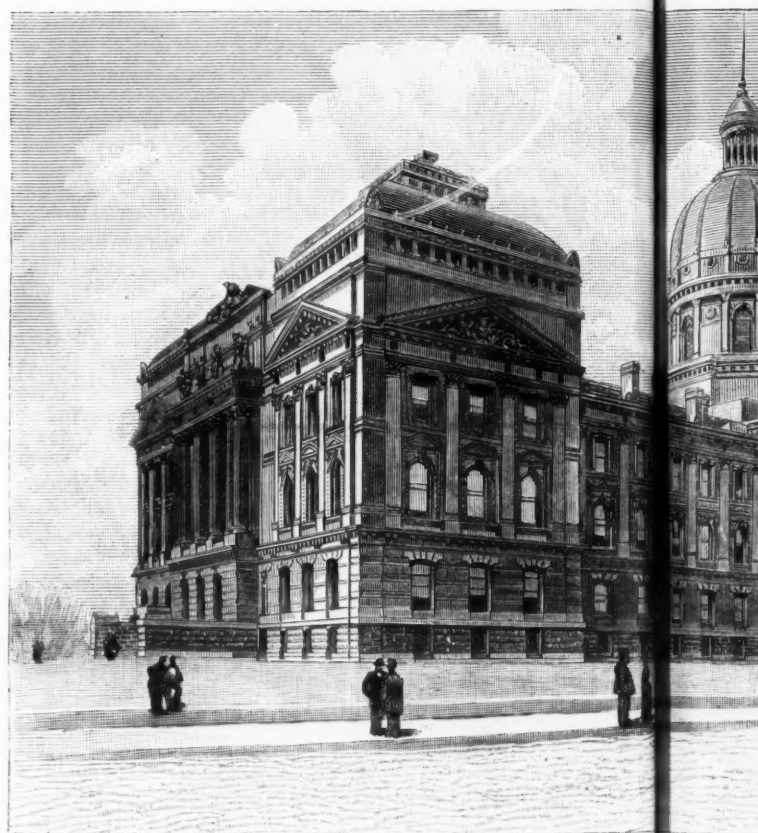
The Stock-yards located here are said to be as large as those in Kansas City, and really stand next to Chicago in point of volume of business. Having access to every railroad centring here by means of the Belt line, of course their facilities for handling business is unsurpassed.

The new Capitol Building is one of the wonders of the city, and is a marvel of beauty and perfection in that class of architecture. The Court-house is also a most creditable structure, and is a fair indication of what the city is gaining in material wealth. Tomlinson Hall is not particularly engaging to the eye—that is, as to its exterior—but it serves the public to great advantage whenever a large assemblage occurs, and where accommodations for three or four thousand are required. In business edifices the "When" block stands well, and also the Wright and the Martindale buildings, on East Market Street. The Vance building is very imposing, situated as it is at the intersection of three streets. The Ingalls block, on the opposite corner, owned by the great President of the Big Four Railroad, better known as the "Kankakee" line, is also a fine building, and pays, so I hear, 12 per cent. per annum on the investment; and while referring to Mr. Ingalls, it may be well to say that, though he is a resident of Cincinnati, Indianapolis is largely indebted to him for its magnificent Union Depot. There are three or four very large business houses here owned by Eastern capitalists, which shows they are not afraid to invest a part of their surplus in the great capital of Indiana. The new bank building of the Fletchers is also an ornament to the city and a credit to the owners. There are any number of banking institutions here, but none of large capital or of commanding influence. I mean a bank with a cash capital of \$500,000 and a surplus of \$100,000, whereas there ought to be at least one with a capital of \$1,000,000 and one with \$500,000, and half a dozen with \$250,000. Those they have are all good, safe and sound, and carefully managed, and each one seems to have its equal proportion of the business. But Indianapolis, by its population and wealth and business, is entitled to at least one bank on the order of the First National at Chicago and at Cincinnati.

While there is a void here and there in the development of Indianapolis enterprise, we are glad to say that there is no "opening" for a Republican daily paper, as the *Journal* is not only a credit to the State, but to American journalism in general. It is enterprising in securing news; it is able, as well as fearless, in its editorial treatment of all questions discussed; and, above all, its columns are clean and reliable. It is a great newspaper.

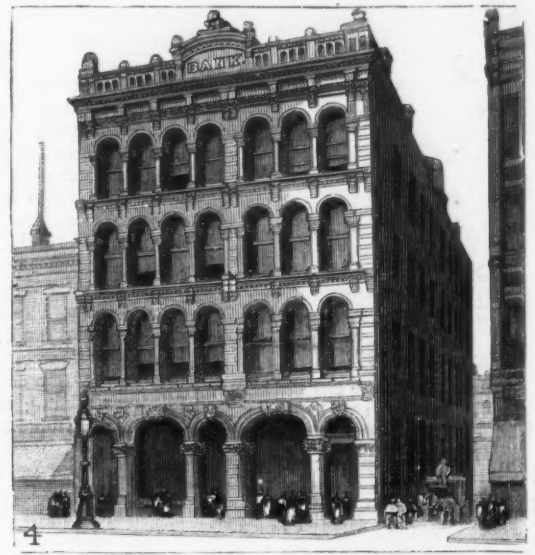
The other dailies are the *Sentinel*, *Democratic*, and the *News*, independent, both of which are excellent. The *News* is spicy—kicks hard at everything not to its liking.

JOHN H. PATTERSON.



1. CORNER OF WASHINGTON STREET AND VIRGINIA AVENUE. 2. THE COURT-HOUSE. 3. THE BOARD OF TRADE BUILDING. 4. VIEW ON WASHINGTON STREET. 5. VIEW ON EAST WASHINGTON STREET. 8. THE COURT-HOUSE. 9. CHRISTIAN ASSOCIATION BUILDING.

INDIANA.—THE CITY OF INDIANAPOLIS. FROM SKETCHES BY C. BUNN AND PHOTOS.



ON EAST STREET. 6. THE STATE-HOUSE. 7. VIEW ON WASHINGTON STREET, EAST FROM ILLINOIS AVENUE. 8. THE UNION DEPOT. 9. TOMLINSON HALL. 10. THE YOUNG MEN'S BUILDING. INTERIOR OF UNION DEPOT.

APOLIS STREETS, PUBLIC BUILDINGS, ETC.

C. BUNN PHOTOGRAPHS.—SEE PAGE 394.

ANDERSON,

THE CAPITAL OF MADISON COUNTY,
INDIANA.

ANDERSON, January 5th, 1889.

THIS is the first city I have visited located in the natural-gas district. It is only thirty-six miles from Indianapolis on the good "Bee Line" Railroad. The first impressions I received of it were favorable. As the train approached the town, numerous manufacturing establishments, all new, were to be seen, while there were others in process of erection. Around these were clusters of small residences, some of which were tasteful cottages, while others were pretentious two-story frames and hardly any two alike. Then there arose in the distance the tall and stately spires of several churches, and behind them all was to be seen the dome of the Court-house, rising so proudly above that elegant and massive structure.

Alighting from the train, I was met by a full array of hackmen, expressmen and omnibus-drivers, while a short distance away I heard the cry: "Street-car for down-town—only five cents!" I availed myself of that conveyance, and was delighted to find it one of the handsomest I ever entered; and when the driver took up the reins and started his mule-team, and quickly put them upon a dead run, distancing all his competitors, I felt that I had dropped into a live community. The streets were clean, sidewalks were everywhere, and the residences decidedly above the average in architectural attractions.

Anderson is a splendid young city. It was late in coming to the front with natural gas, but now it has been revolutionized by its presence. It was only on the 1st day of April last that gas was discovered here, and all that has been accomplished has been wrought since that day. From a village of 4,000 it has developed into a city of 8,000, and with every prospect of running up to 10,000 before 1890. The change that has taken place has bordered the marvelous, but everything seems to indicate a permanency of prosperity. The factories that have been erected, and those now in process of construction, are of the most substantial character, intended, evidently, for all time to come. There is one now going up that is the largest of the kind in the world, for the manufacture of straw-board, and will have a capacity of 30 tons per day. The buildings and machinery will cost \$225,000. It is the only mill built by what is known as the Straw-board Trust, or the union of the other straw-board manufactories throughout the United States. From Covington, Ky., has come a great concern for the manufacture of nails, wire and rod, really three factories under one management. Its daily output will be 1,500 kegs of nails, 75 tons of wire and 100 tons of rod. Some 300 skilled workmen will be employed, and will commence operations about February 1st. Buffalo, N. Y., has made a contribution of a nut- and -bolt works, employing 140 operatives, and with a capital of \$125,000. They commenced with 65 men, but have quickly doubled that number, and there is no telling where it will end. From Dayton, O., a company has come to manufacture wooden dishes and paper buckets for oysters and candy. They will employ 300 persons. A new company has been organized for the manufacture of knives for paper-cutting, used by printers and book-binders, and also for tobacco, leather, fodder, etc. It is just now about ready to begin operations. Their buildings are all up, the machinery has been put in, and their wheels may commence to turn at any day. There is one large glass works in active operation. Finding fuel in Butler, Pa., too expensive in order to permit competition with others in the same line at Marion and Muncie, they closed their old works, located where fuel is free, and they are now holding their own. They are not yet in complete running order, but soon will be. They manufacture all kinds of druggists' glassware. There will soon be another glass works under running orders that was presented as a gift from Martin's Ferry, O. Its product will include all kinds of colored and ornamented ware.

These factories, of course, represent just so much new capital brought into the city, and not one dollar of stock has ever been taken by a resident of Anderson in any factory located here; neither have any of these factories borrowed money from Anderson with which to erect their works.

There are ten gas-wells in Anderson and vicinity, possessing a capacity of 70,000,000 feet per day. All of them are within 1½ miles of the Court-house, while a majority are within half that distance. Though ten is not considered a large number, still there could easily be twenty or more if there was necessity for them; but they are planted as fast as they are needed. What may be re-

garded as something unprecedented, no non-producing well has as yet been struck in Madison County; so that in the quantity of gas produced there is not only enough for Anderson and its factories, but also a sufficiency for a city of 50,000 population and a dozen additional establishments as large as those now here. While the total capacity of the wells now open is stated to be 70,000,000 feet, by boring others it could be doubled in sixty days. The gas found here is of that dry quality so desirable to all who use it, as when it is accompanied by water the pipes freeze and much trouble is then experienced. There are thirty-one gas-wells in the county.

Free gas and free land is given to all industrial concerns of importance that locate in Anderson, and the Board of Trade is anxious to get into communication with manufacturers seeking locations in the gas-district. The people here feel that they have a city worthy the attention of all persons so interested, and are not averse to being compared with any place in the gas-region. Transportation facilities are excellent, and a freight tariff as low as that enjoyed by Indianapolis is in force. They have the Cleveland, Columbus and Cincinnati Railroad (the Bee Line), that extends from Cleveland, Ohio, to St. Louis, Mo., a part of the Vanderbilt system, which gives a great east and west route, connecting, as it does, at Indianapolis, with all the lines radiating from that city. It has the Pan Handle Road from Cincinnati to Chicago, and also the Cincinnati, Wabash and Michigan, extending from Benton Harbor, Mich., to Indianapolis, and what is more, it is soon to be completed to Rushville, Ind., only a few miles distant, where it will connect with the Cincinnati, Hamilton and Indianapolis Road, which will give still another route to the Queen City on the Ohio River, shorter by some miles than that now afforded by the Pan Handle. There is a road, then, to the east and west, and to the north and south, so that when the Rushville extension of the Wabash and Michigan shall have been completed there will be nothing more necessary in the way of railroads to render the transportation facilities of Anderson perfect.

While property has greatly advanced, still it has not gone beyond the reach of people of the most moderate means who are in search of homes. Two hundred houses have been erected since June, 1888, but more are needed now, and if one hundred were put up next week they would all be sold or rented within ten days. The streets here are clean, well graded and handsomely shaded with trees, almost covering them with their foliage (in Summer), reminding one of the picturesque cities of Connecticut. There is a magnificent Court-house in the centre of the Public Square; an opera-house near by; a really beautiful high-school building; plenty of churches; handsome retail stores, and almost everything in a commercial way except a National Bank, which is greatly needed, and would secure a large business from the day of its opening. I am requested to state that any capitalist coming here with \$100,000 to establish a National Bank would be regarded as a benefactor.

Anderson is located on high ground, and has a gradual descent on three sides of from twenty to thirty feet, so that drainage is excellent. The community is made up generally of hardy, honest people, who possess all the traits of the enterprising American citizen.

I am greatly indebted to Messrs. Charles L. Henry, J. W. Lovett and others for special courtesies during my visit in Anderson.

JOHN H. PATTERSON.

MUNCIE,

THE CAPITAL OF DELAWARE COUNTY,
INDIANA.

MUNCIE, January 7th, 1889.

STARTING out on my tour of the gas-field of Indiana, the first halt was at Anderson, and from there I came to Muncie, which is only fifty-three miles north-east from Indianapolis, on the great "Bee Line" Railroad. Arriving after darkness had set in, I was enabled to see the city by gas-light, and the numerous flames that shot up in all directions, coming from gas-torches upon the streets and in yards, gave ample evidence that I was still within the natural-gas field. The stores and show-windows were lighted by it, as well as the streets, and the bright illumination to be seen everywhere was as impressive as it was pleasing.

Here is a little city of about 12,000 population, the largest, in fact, of any in the gas-range, and the manner in which its enterprising citizens have taken advantage of their location and opportunities since gas was discovered is enough to make one dizzy to contemplate. It did not take them long to ascertain that by united action "there was

millions in it," so they united; and the result is that Muncie has more than double the population it had eighteen months ago, while the merchants and business men generally have overflowing bank-accounts. A notable evidence as to what natural gas has done for individual interests is seen in a magnificent business block lately erected on a leading thoroughfare at a cost of \$85,000, a building that would be a most creditable ornament to Indianapolis. It came from an estate that was land-poor two years ago, but which is now considered worth \$250,000. The growth of the city, however, has not been in the way of new business blocks, but rather in extensions of business, new private residences, enlarged capital and surplus, increased population, and in the general advance in all real-estate values. The city, though, has always had a reputation for push and energy, and has been blessed with some of the most sincere public-spirited citizens that ever adorned a community. While they are always on the lookout for ways and means to augment their own accumulations, still they stand by the general good of the people, and in helping themselves they have lifted the city into prominence and unrivaled prosperity. There is much wealth here, too, there being one or two persons quoted as worth a half-million each, while there are half a dozen who range above a hundred thousand, and several from forty to fifty thousand.

Gas was first discovered in Muncie on November 11th, 1886. Twelve years ago parties were boring for coal near here, but found gas coming up so strongly that operations were abandoned. Then, when the gas-mania came, they remembered their former discoveries, and resumed operations at the old stand, and they found the gas in great quantities. Two wells were drilled, and by actual scientific tests, lately applied, it has been discovered that their volume of discharge has materially increased, which fact tends to show, if nothing else, that the gas is not giving out. There are twenty-eight gas-wells within a radius of two miles of Muncie, and they tell me that they have at least three times more of it than is required; that not over twenty of the wells are in use, while the others are held in reserve; and that, too, in face of the fact that the factories have all they want, and at least a thousand or more private houses are supplied with all they can use for light and heat. As there are two opposition companies supplying the gas, of course high rates are out of the question. The factories are all outside the city limits, and are furnished by land syndicates, while all inside the corporation get it from the two companies referred to. It is claimed that the gas-supply is at least 75,000,000 feet per day; that every well in the county is absolutely dry; that in boring for gas, water has never been struck; that every well is as dry as powder, and, though conveyed in pipes in many places lying upon the surface of the ground, that it has never been known to freeze, which is almost unparalleled in the history of natural gas, and is a claim made but by few gas-cities in this country where gas has been discovered. The prices of gas to private consumers, residences, range from \$6 to \$16 a year, no matter how much used

for heating purposes, while the cost for illumination ranges from \$2 to \$15. Store-rooms are heated at from \$6 to \$12, and lighted from \$3 to \$10, while the factories are supplied absolutely without cost.

Thirteen factories of various kinds have been located here within sixteen months, employing all the way from 12 to 130 persons each, though but few of them, possibly three or four, work the lesser number, the average being probably somewhere between 50 and 60. They all came from a distance, and their operatives are of the better class of mechanics. There are five glass factories alone, and all of them are old-established concerns except one. Their output consists of window-glass, fruit-jars and bottles of all kinds, while their employes, combined, number about 600. One factory came from Buffalo, N. Y.; two from Bellaire, O.; one from Covington, Ky.; and one from Louisville. There is a jute-bagging factory here, one of the largest in the United States, turning out 20,000 yards per day; a skewer factory making 60 per cent. of all the skewers turned out in this country, 1,600,000 per day; a bending works for the manufacture of material to equip 1,200 buggies per day; an extensive bridge works for the construction of river bridges entirely of iron; a handle factory for spades and shovels, the largest of the kind in the West; a rubber works manufacturing anything called for in that line, though making a specialty of overcoats; a straw-pulp and paper factory; a factory for wood-carving by machinery; extensive machine-shops; a scale factory; planing-mills, besides flour-mills, grain-elevators, etc. There are two wholesale groceries; four banks; a fine opera-house; two daily papers; excellent water works; a perfect system of fire-protection; an unusually large public library; a beautiful Court-house, and High-school building, as may be seen from this week's issue of FRANK LESLIE'S ILLUSTRATED NEWSPAPER; three fine railroads; an industrious Board of Trade, that is constantly on the alert to advance the interests of the city; real and personal property valued at \$2,087,180, while there is only a bonded indebtedness of \$26,000 and no floating debt of any kind whatever. Besides natural-gas torches here and there all over the city, it is also lighted by two systems of electric lights, which they claim is supplied at a cheaper rate than in any other city in the State. They also claim 500 miles of graveled roads in the county, while eleven pikes radiate from Muncie. There is a fire-alarm, telephone, thirty miles of improved streets, churches of all creeds, and so many other good points, that my readers will pardon me if I draw the line in enumerating them, as my allotted space is well-nigh exhausted.

The new houses that were erected during 1888 will verge close on to 300, and though small, still they are comfortable and inviting. Mr. James Boyce, a gentleman to whom Muncie owes much for what he has done for it, has erected fifty or more on his addition of "Boyce-ton," every one of which is occupied by mechanics; while as many more will be added in the early Spring, thus giving him a really beautiful suburban village of at least 500 population.

Muncie, as before stated, is in the field for



INDIANA.—HIGH-SCHOOL BUILDING AT MUNCIE.

the location of manufacturing institutions, and it proposes to offer "inducements" in the way of free gas and free lands in order to secure them. I have tried to candidly set its advantages before my readers as I understood them, and as they were given to me. There is no need to go into long explanations of what those advantages are, as they must be apparent to interested persons; and this letter may close with an additional word relative to its transportation facilities. The north and south line is the Fort Wayne, Cincinnati and Louisville Road, extending from Fort Wayne, practically, to Cincinnati. In real commercial value to the city it is of much more importance than the Lake Erie and Western, which starts at Sandusky, O., and ends at Lafayette, Ind. The Fort Wayne Road is valuable because it gives direct connection with lines at Fort Wayne to Grand Rapids, and, in fact, all points in Michigan, besides Cincinnati and the South. The east and west road is the Cleveland, Columbus and Cincinnati, or, as it is better known, the "Bee Line," extending from Cleveland, O., to St. Louis, passing through Indianapolis, and laying at the feet of Muncie, as it were, the railway system of Indiana centring in that great city. It being a part of the Vanderbilt system, of course it possesses the closest possible business relations with the Lake Shore Road at Cleveland, and passengers taking sleepers at Indianapolis do not change until their arrival at New York.

This letter should not be closed until my personal thanks are extended to numerous citizens of Muncie, to whom I am indebted for many courtesies: James Boyce, Thomas H. Kirby, J. O. Sprinkle, A. L. Kerwood, T. F. Rose and George F. McCullough.

JOHN H. PATTERSON.

MARION,

THE CAPITAL OF GRANT COUNTY,
INDIANA.

MARION, January 8th, 1889.

TALK about natural gas, will you, and then come to Marion and see it in all its fullness! They not only have it in the earth under the city, and in stores and offices and homes, but they have it everywhere, on the street-corners, in arches over the streets, in private yards, in alley-ways, and wherever there is a call for it. The factories are full of it, and it is used for every purpose where heat or light is necessary. It may be assumed from this statement that Marion is a "Boss" natural-gas town, and I am not unwilling to have my readers so understand it; for if there is such a thing as a superabundance of it, then this is the place where it is to be found. There may be a question as to whether Marion is in the centre of the gas-field, or on one side or at the tail-end of it, but that cuts no figure when the question of *quantity* is considered, for they have it here in absolute abundance, at least a hundred times more than is required. There are 22 or 23 wells in Grant County, of which 14 are within the corporate limits of Marion. Not all of them are what may be regarded as large, but none are small, and only a few of them are in use. The Baldwin (No. 10) is perhaps the largest here, and when tested indicated 10,000,000 cubic feet in twenty-four hours. No. 5 has one 26-pot window-glass factory drawing from it, and also a 12-pot fruit-jar factory and two other concerns, and it supplies 55 private houses, and yet but one-eighth of its gas-supply is consumed. This fact has been obtained by actual scientific tests, and does not permit of doubt or speculation regarding its accuracy. No. 4 has seven factories drawing from it, and there is a plentiful supply for three or four more. And what may be regarded as a matter of much weight in connection with the number and power of the wells here, it may be stated that No. 3 has now been in constant use for two years, with untold millions of feet of gas taken from it, and yet upon a careful test, instituted December 1st, showed exactly the same amount of pressure that it did the day it was first measured. This would seem to go far towards settling the question as to whether the supply is to be permanent, or whether it will speedily become exhausted. There may be some peculiarly constituted geological experts who consider it only a question of time as to when the supply will cease, who reason it out of philosophical *data*, but in the light of facts as they really exist such conclusions are not only preposterous, but ridiculous. Careful estimates place the total supply of gas in Marion at 80,000,000 cubic feet per day, which is sufficient for a population of a half-million people. Marion does not expect to reach the limit of its growth this year, nor next; but all her people have great expectations regarding its future development, and they want the manufacturers of the country who need free fuel in order to enable them to compete with their competitors to come here and see for themselves the advantages of the

city. There is free gas and free lands to all industrial interests of any magnitude.

The general location of Marion is desirable. It is not upon low ground, nor is it upon a dead-level, with no drainage; but upon the contrary, its surface is diversified with a gradual descent to the north, rendering a service to the people in a sanitary way that human skill could not excel. There is considerable wealth in the community, and, what is not true of many cities, the rich men of Marion made their money right here. The merchants and business men generally are well-to-do and prosperous. The number of large stores here is really remarkable, while the stocks of goods displayed would do credit to a city of double its population. There is a growing demand for more and larger store-rooms, for some of those now confined in close quarters have outgrown their present accommodations and are calling loudly for something better. A half-dozen new business blocks would be filled speedily if they were provided. The retail trade of the city is getting to be enormous, for with that of the farmers who trade here, and that of the operatives in the factories, the merchants are having a harvest. One of the most interesting sights I have witnessed on my tour through the gas-belt was the great mass of vehicles of every description tied up around the Court-house during last Saturday. There were wagons, carts, carriages, buggies, sulkies and saddle-horses, and, in fact, every mode of conveyance used by farmers. They were not remarkable for anything except in their number, for there

east and west railway systems, and places all of them in direct competition for the business not only of Marion, but of all the other cities along its route, and compels a freight tariff as low as competition can place it. This road acts as a sort of balance-rod for the others and keeps them all in line.

The value of gas as a commercial agent in the promotion of business and industrial pursuits has been made very apparent in Marion. Two years ago, it was a quiet and unobtrusive country village, with no prospects of prosperity over any of the other county towns in Indiana, while to-day it contains a population of 10,000 or more, and has become famous as an industrial mart. Its growth and development has been marvelous, and yet there is not an unbeliever nor a crank in the town who will deny that there are much greater things in store for it in the future. Five hundred small but comfortable houses were erected during 1888, and yet 250 more are in pressing need. Many operatives are compelled to huddle together in the same house like chickens on the same roost, and great inconvenience has been experienced because of this state of affairs. Who of my readers will come here and remedy this evil? There never was an opportunity more golden for an enterprising man to make a fortune in five years than for some one to relieve the working-men of Marion of their want of homes. Fifteen per cent. per annum could be made on such an investment. Twenty or more new factories of various kinds have been located here within sixteen months, and they



INDIANA.—COURT-HOUSE AT MUNCIE.

were so many that hundreds were compelled to "locate" around on the side streets and unhitch, and halter their horses to the wagon-wheels. This was the scene upon the streets while their owners were inside the stores buying themselves rich.

But Marion has well-paved streets, and in most localities good sidewalks. It possesses a well-appointed opera-house; three banks, with large capital and careful management; splendid artesian water; a thoroughly equipped fire department on the direct-pressure system, that has on several occasions demonstrated its efficiency; two excellent daily papers; and, what is seldom met with in Indiana, it has two first-class hotels; and, besides all else, there is to be found here a good, healthy public sentiment prevalent in all circles. There is not a dollar of debt hanging over the city except about \$18,000 in water-works bonds, while taxes are very low. But, above all, the natural gas, supplied not only for manufacturing, but for domestic use, is so cheap that it scarcely enters into the expense-account of the people.

The transportation facilities of Marion are of the best. Three lines of railway cross at this point—the Pan Handle, belonging to the Pennsylvania system, the Toledo, St. Louis and Kansas City, and the Cincinnati, Wabash and Michigan. The first places Marion on a direct line between Chicago and New York via Columbus, O.; the second gives it a straight line to Toledo, where it intercepts the Lake Shore system, while its western terminus is St. Louis; and the third is the great north and south route, extending from Indianapolis to Benton Harbor, Mich., touching Anderson, Marion, Wabash, Warsaw, Goshen and Elkhart, in this State, and Niles and Benton Harbor, in the other. It actually crosses thirteen of the great

have all brought operatives with them. There are two very large window-glass factories, one of them with 26 pots, and there is also a fruit-jar and bottle works. The latter came from Louisville and the former from Pittsburgh. There is a bell-foundry that came all the way from Massachusetts; a wood-pulp mill, a skewer factory, a straw-board works that is running night and day; a pressed-brick works turning out 140,000 brick per week, the handsomest I ever saw, and other establishments of importance by far too numerous to mention. The entire city is encircled with them, while prospecting parties are arriving daily to take in the situation.

Considering the resources of Marion, its rapid growth and future prospects, land is not held at exorbitant rates; while to manufacturers it is absolutely *donated*, and also all the gas they may require, as long as the gas holds out to burn. There is a Board of Trade here that looks after the interests of Marion, and Mr. W. C. Webster, the President, Mr. Geo. N. Winchell, Mr. H. G. Hamaker and Mr. Wm. L. Lenfestey, prominent members, will answer all inquiries from persons at a distance who may desire special information.

JOHN H. PATTERSON.

WABASH.

THE CAPITAL OF WABASH COUNTY,
INDIANA.

HERE is a city that sits beautifully upon a hill, and it would only be just to state that the hill it sits upon is not only of generous proportions, but is inviting to the eye. It is true that the business part of the town is down in the valley on the north bank

of the famous Wabash River; but that is as it should be, for then the side of the hill becomes the dividing line between home and business life. It occurs to us that there is great benefit to be derived from such a location of a city as this possesses, especially in a sanitary way, for the drainage is then not only natural, but abundant, which is regarded the world over as always preferable to the best that engineering skill can produce. But aside from that, there is an attractiveness in the location not often seen. The view of the valley as far as the eye can see is one that will afford pleasure and gratification.

No observing stranger could come here and stroll through the streets, and not feel that he was in a progressive, enlightened community, where great stress is given to home life. The many attractive residences that dot the town over are ample proof of that, and the churches and school-houses that sit so proudly between them stamp, in a most effectual way, the high regard in which religion and education are held by the people. These are impressions that crowd upon one who really knows nothing of the home life of this community; but when the statement is made that there is no rowdy element here, no anarchists, no agitators, and no strikers or disturbers of the public peace, then we come down to facts as they exist; and putting the two together, we understand why the churches and school-houses and attractive homes occupy so much of the public attention. They are elements that go hand in hand towards building up and elevating a community. But in this town the eyes of every citizen of Wabash sparkle with pride and pleasure when the subject of *homes* are mentioned, for they claim that they have the figures to prove that 90 per cent. of all the families in the city *own their homes*. This may seem startling to some, but it is undoubtedly true.

Well, here is a little city of 7,000 population, which is a gain of 3,500 in ten years. That is not startling, to be sure, but it is about as much as seven-eighths of all the other county towns in the State have done. Where other cities have grown more rapidly and the rule has been broken, the cause is found to exist in the industrial enterprises they have developed, and not to any superior advantages they possessed in the way of excellency of location, or water, timber, climate, health, or otherwise.

Generally speaking, Wabash is of the conservative order of Indiana cities. While its business men are live and energetic, and lose no opportunities to gather in the sheaves when the harvest is ripe, still they confine their operations to legitimate pursuits, and prefer to build up their fortunes by safe business methods rather than by venturesome speculation. A county absolutely free from debt, and with money in the treasury and the city owing but \$24,000, is ample proof that wisdom and prudence prevail, even in the expenditure of the public funds. There has been a steady regular growth in all the departments of trade, while public improvements are everywhere manifest. The value of the real and personal property in the city has shown a marked increase every year, until now it foots up an even \$2,000,000. The country surrounding Wabash is as rich and fertile as any in the State, and none could be more thoroughly cultivated. Two years ago there were 2,050 miles of drain-tile in use in the county, while other farm improvements in the way of fences and all kinds of machinery, to say nothing of new residences and barns, are to be seen on almost every road. And in the matter of livestock of all kinds, there has been unusual attention paid to the subject by the farmers generally throughout this region. Ten public roads leading into Wabash are graveled, and great care is paid to their preservation, so that in bad weather the farmers can easily get to town to do their trading. This is the kind of a country in which Wabash is located, and the class of people who contribute to its wealth and prosperity.

In banking facilities, Wabash stands in the front. There are three regular banking institutions, and one other company, of \$50,000 capital, organized for the special purpose of loaning money. The First National and the Wabash National, both with a capital of over \$100,000 each, show the appreciation of the public in the security offered by banks operated under the eye of the Government. Besides, they are both carefully and judiciously managed.

There is a magnificent system of water works, that of the stand-pipe and direct pressure combined, while the water is drawn from springs, and is as pure and as desirable as can be found in the State. The city is lighted by electricity, and, generally speaking, possesses all the latter-day concomitants, such as an opera-house, a number of social clubs, several most excellent newspapers, and a general enterprising public spirit.

In railroads, there are two important lines crossing here—the Cincinnati, Wabash and

Michigan, extending from Indianapolis to Benton Harbor, Mich., and the great Wabash system, with its 2,500 miles of road tapping all the large Western trade centres from Detroit and Toledo to Chicago and St. Louis. The value and importance of the Cincinnati, Wabash and Michigan line to the business of the city cannot well be overstated. It not only affords direct connection at Indianapolis with all the lines radiating from that great railway centre, but is a direct route to the lumber regions of Michigan, which is an important factor in the business of any manufacturing city. And what can be said of but few railroads, and especially one but 183 miles in length, it crosses thirteen of the really great railway systems of the country, and in doing so throws every one of them into competition with the other, not only for Wabash business, but for that of all the other points along the line, guaranteeing bottom rates not only for freight, but also passenger traffic.

A MANUFACTURING POINT.

Wabash is already a manufacturing centre of considerable note, as some of its establishments are known through the entire country, while the variety of articles made will be a surprise even to Indiana people themselves. Timber of all kinds being in close proximity, the character of the industrial product partakes largely of wood-working order. There are two factories making all kinds of household furniture, and both do an extensive business. There is another turning out wooden goods of a novelty character, such as boxes for mailing all kinds of light articles, seed-cases, battery-boxes, alphabet-blocks, coffee-mills, etc. There is one large concern engaged in making school and church furniture, employing 100 persons, that finds customers in almost every State in the Union. The factory devoted to the making of screen doors and windows is said to be the largest in the country making that single class of goods, as they turn out on an average one door every minute during the working hours of the day. Then comes an establishment devoted to the production of all kinds of wagon-stock; one that makes table-slides; a well-established foundry and machine shop; a woolen-mill that makes blankets, yarns, flannels and skirting; three very large planing-mills making doors, sash, blinds, floor-

ing and house-building material generally; and last, but not least, there is a "Dandy" anti-shaft-rattler made here that finds sale in Europe, as well as America, the output being more than a million a year. In addition to those enumerated, there is quite a number of small concerns that may fairly be classed as contributing to the general industrial character of the city.

Almost all the factories in Wabash are built of stone, as it is so plentiful and so near at hand that it is about one-half cheaper than brick. It is of a beautiful blue tinge, and known everywhere as Wabash limestone, as it is shipped in great quantities all over the country. The great hill upon which Wabash is situated is full of it, and there is enough of

it there to supply the demand for generations to come.

NATURAL GAS.

Though not, strictly speaking, in the gas-belt, still Wabash is so close to it that, figuratively speaking, you can stand on top of the Court-house and toss your hat over into it, for it is only some eight or ten miles distant; but it is bountifully supplied with that ethereal element by means of a pipe-line, and the people here get so much of it at so slight an expense, that they do not realize that they are any the worse off because they are not located a few miles further south. The gas is piped to Wabash in an 8-inch main, and the same-sized mains are used over the entire city, so that there is never any decrease in the pressure

of the gas, and all irregularity of supply is prevented. This is probably not so in any other city supplied with gas by pipe-lines. So far as the capacity of the plant to furnish gas in a sufficient quantity is concerned, I am told that it could easily supply a city of twenty thousand population. The company owning the plant have seven wells at its command at this time, though, as a matter of fact, it is taking gas from but two or three of them, the others being sealed for future use. The low rates at which gas is supplied to the public is really surprising. To heat a store-room of the largest size costs but \$27 a year; offices with one stove, \$9, and two stoves, \$15; while the expense for a private residence is but \$13.12, no matter how much used for cooking or heating. For illuminating purposes the rate is 15 cents per month per jet from one up to six, while for all in excess of that number, it is but 7 cents. The prices at which the gas is furnished are regulated by city ordinance, and the company operating the plant got its privileges only upon that condition.

Wabash is awake to its advantages as a manufacturing point and is determined to make the most of them. Free gas and free lands will be given to all industrial establishments of importance that will locate here, and the Board of Trade will be pleased to entertain propositions looking to that object. They even go so far as to say that they will hold out the same inducements as any city directly in the gas-belt, and they do not wish to be overlooked by man-

ufacturers prospecting for new sites, and they invite the whole world to come and behold what special and peculiar advantages they have to offer.

Fifteen million feet of gas per day is equal to 1,250 tons of coal per day, or 70 car-loads; or 8,750 tons per week—490 car-loads; or 35,000 tons per month—1,960 car-loads; or 420,000 tons per year—23,520 car-loads.

Here we have a total yearly equivalent in the best coal of 23,520 car-loads, and we are only at the beginning! Before the present year is at a close we confidently hope to have a combined natural-gas flow of at least 150,000,000 cubic feet per day, equal in coal to 12,500 tons, or 700 car-loads.

JOHN H. PATTERSON.



INDIANA.—THE COURT-HOUSE AT ANDERSON.



INDIANA.—THE COURT-HOUSE AT MARION.



INDIANA.—THE COURT-HOUSE AT WABASH.